

2ashmount

1649

PAGE: 1

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/992,914C

DATE: 08/13/1999
TIME: 11:32:50

Input Set: H992914C.RAW

This Raw Listing contains the General Information
Section and up to first 5 pages.

ENTERED

```

1  <110> APPLICANT: WATANABE, Eijiro
2      OEDA, Kenji
3  <120> TITLE OF INVENTION: Raffinose Synthase Genes and Their Use
4  <130> FILE REFERENCE: 0020-4348P
5  <140> CURRENT APPLICATION NUMBER: US/08/992,914C
6  <141> CURRENT FILING DATE: 1997-12-18
7  <150> EARLIER APPLICATION NUMBER: 8-338673/1996 JAPAN
8  <151> EARLIER FILING DATE: 1996-12-18
9  <160> NUMBER OF SEQ ID NOS: 86
10 <170> SOFTWARE: PatentIn Ver. 2.0
11 <210> SEQ ID NO 1
12 <211> LENGTH: 2746
13 <212> TYPE: DNA
14 <213> ORGANISM: Vicia faba
15 <220> FEATURE:
16 <221> NAME/KEY: CDS
17 <222> LOCATION: (101)..(2497)
18 <400> SEQUENCE: 1
19      aattttcaag catagccaag ttaaccacct tagaaacatt cctacaagct acttatccct 60
20      gtcaataagc tactaagcta ccagagtctc atcaatcacc atg gca cca cca agc 115
21                                     Met Ala Pro Pro Ser
22                                     1          5
23      ata acc aaa act gca acc ctc caa gac gta ata agc acc atc gat att 163
24      Ile Thr Lys Thr Ala Thr Leu Gln Asp Val Ile Ser Thr Ile Asp Ile
25               10          15          20
26      ggt aat ggt aac tca ccc tta ttc tcc ata acc tta gac caa tca cgt 211
27      Gly Asn Gly Asn Ser Pro Leu Phe Ser Ile Thr Leu Asp Gln Ser Arg
28               25          30          35
29      gac ttc ctt gca aat ggc cac cct ttc ctc acc caa gtc cca cct aac 259
30      Asp Phe Leu Ala Asn Gly His Pro Phe Leu Thr Gln Val Pro Pro Asn
31               40          45          50
32      ata aca aca aca aca aca acc act gct tcc tct ttt ctc aat ctc aaa 307
33      Ile Thr Thr Thr Thr Thr Thr Thr Ala Ser Ser Phe Leu Asn Leu Lys
34               55          60          65
35      tcc aac aaa gat acc att ccc aac aac aac aac acc atg ttg ttg caa 355
36      Ser Asn Lys Asp Thr Ile Pro Asn Asn Asn Asn Thr Met Leu Leu Gln
37               70          75          80          85
38      caa ggt tgt ttc gtt ggt ttc aac tcc acc gaa ccc aaa agc cac cac 403
39      Gln Gly Cys Phe Val Gly Phe Asn Ser Thr Glu Pro Lys Ser His His
40               90          95          100
41      gta gtt cca ctc ggc aaa cta aaa gga atc aaa ttc atg agc ata ttc 451
42      Val Val Pro Leu Gly Lys Leu Lys Gly Ile Lys Phe Met Ser Ile Phe
43               105          110          115
44      cgg ttc aaa gtt tgg tgg aca act cac tgg gtc gga aca aat gga cag 499

```

PAGE: 2

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/992,914C

DATE: 08/13/1999

TIME: 11:32:50

Input Set: H992914C.RAW

45	Arg	Phe	Lys	Val	Trp	Trp	Thr	Thr	His	Trp	Val	Gly	Thr	Asn	Gly	Gln	
46			120					125				130					
47	gaa	cta	caa	cac	gaa	aca	caa	atg	tta	atc	ctg	gac	aaa	aac	gac	tcc	547
48	Glu	Leu	Gln	His	Glu	Thr	Gln	Met	Leu	Ile	Leu	Asp	Lys	Asn	Asp	Ser	
49			135				140					145					
50	ctc	gga	cga	ccc	tat	gtc	tta	ctc	ctc	cca	atc	cta	gaa	aac	acc	ttc	595
51	Leu	Gly	Arg	Pro	Tyr	Val	Leu	Leu	Leu	Pro	Ile	Leu	Glu	Asn	Thr	Phe	
52			150			155						160				165	
53	cga	acc	tca	ctc	caa	ccc	ggt	ctc	aac	gat	cac	ata	ggc	atg	tcc	gtc	643
54	Arg	Thr	Ser	Leu	Gln	Pro	Gly	Leu	Asn	Asp	His	Ile	Gly	Met	Ser	Val	
55				170					175					180			
56	gaa	agc	ggt	tca	aca	cat	gtc	acc	ggg	tca	agc	ttc	aaa	gca	tgt	ctt	691
57	Glu	Ser	Gly	Ser	Thr	His	Val	Thr	Gly	Ser	Ser	Phe	Lys	Ala	Cys	Leu	
58			185					190				195					
59	tac	atc	cat	ctc	agt	aac	gac	cca	tac	agt	ata	cta	aaa	gaa	gca	gtt	739
60	Tyr	Ile	His	Leu	Ser	Asn	Asp	Pro	Tyr	Ser	Ile	Leu	Lys	Glu	Ala	Val	
61			200				205					210					
62	aaa	gta	atc	caa	act	cag	tta	gga	aca	ttc	aag	act	ctt	gaa	gaa	aaa	787
63	Lys	Val	Ile	Gln	Thr	Gln	Leu	Gly	Thr	Phe	Lys	Thr	Leu	Glu	Glu	Lys	
64			215			220						225					
65	aca	gca	cct	agt	att	ata	gac	aaa	ttc	ggt	tgg	tgc	acg	tgg	gat	gct	835
66	Thr	Ala	Pro	Ser	Ile	Ile	Asp	Lys	Phe	Gly	Trp	Cys	Thr	Trp	Asp	Ala	
67			230			235					240					245	
68	ttt	tac	ttg	aag	gtt	cat	cca	aaa	ggt	gta	tgg	gaa	ggt	gta	aag	tct	883
69	Phe	Tyr	Leu	Lys	Val	His	Pro	Lys	Gly	Val	Trp	Glu	Gly	Val	Lys	Ser	
70				250					255					260			
71	ctc	aca	gat	ggt	ggt	tgt	cct	ccc	ggt	ttc	gtc	ata	atc	gac	gac	ggt	931
72	Leu	Thr	Asp	Gly	Gly	Cys	Pro	Pro	Gly	Phe	Val	Ile	Ile	Asp	Asp	Gly	
73			265				270					275					
74	tgg	caa	tcc	att	tgt	cat	gac	gat	gac	gat	gaa	gat	gat	tca	gga	atg	979
75	Trp	Gln	Ser	Ile	Cys	His	Asp	Asp	Asp	Asp	Glu	Asp	Asp	Ser	Gly	Met	
76			280				285					290					
77	aac	cga	acc	tca	gcc	ggg	gaa	caa	atg	cca	tgc	aga	ctt	gta	aaa	tac	1027
78	Asn	Arg	Thr	Ser	Ala	Gly	Glu	Gln	Met	Pro	Cys	Arg	Leu	Val	Lys	Tyr	
79			295			300					305						
80	gaa	gag	aat	tct	aag	ttt	aga	gaa	tat	gag	aat	cct	gaa	aat	gga	ggg	1075
81	Glu	Glu	Asn	Ser	Lys	Phe	Arg	Glu	Tyr	Glu	Asn	Pro	Glu	Asn	Gly	Gly	
82			310			315					320					325	
83	aag	aaa	ggt	ttg	ggt	ggt	ttt	gtg	agg	gat	ttg	aag	gaa	gag	ttt	ggg	1123
84	Lys	Lys	Gly	Leu	Gly	Gly	Phe	Val	Arg	Asp	Leu	Lys	Glu	Glu	Phe	Gly	
85				330					335					340			
86	agt	gtg	gag	agt	gtt	tat	gtt	tgg	cat	gcg	ctt	tgt	ggg	tat	tgg	ggc	1171
87	Ser	Val	Glu	Ser	Val	Tyr	Val	Trp	His	Ala	Leu	Cys	Gly	Tyr	Trp	Gly	
88			345				350					355					
89	ggg	gtt	agg	cct	gga	gtg	cat	ggg	atg	ccg	aaa	gct	agg	gtt	gtt	gtt	1219
90	Gly	Val	Arg	Pro	Gly	Val	His	Gly	Met	Pro	Lys	Ala	Arg	Val	Val	Val	
91			360				365					370					
92	ccg	aag	gtg	tct	cag	ggg	ttg	aag	atg	acg	atg	gag	gat	ttg	gcg	gtg	1267
93	Pro	Lys	Val	Ser	Gln	Gly	Leu	Lys	Met	Thr	Met	Glu	Asp	Leu	Ala	Val	
94			375				380					385					

PAGE: 3

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/992,914C

DATE: 08/13/1999

TIME: 11:32:50

Input Set: H992914C.RAW

95	gat aag att gtt gag aac ggt gtg ggg cta gtg ccg cca gat ttt gca	1315
96	Asp Lys Ile Val Glu Asn Gly Val Gly Leu Val Pro Pro Asp Phe Ala	
97	390 395 400 405	
98	cat gag atg ttt gat ggg ctt cac tct cat ttg gag tcg gcg gga att	1363
99	His Glu Met Phe Asp Gly Leu His Ser His Leu Glu Ser Ala Gly Ile	
100	410 415 420	
101	gac ggt gtt aaa gtt gat gtt atc cat ctg ctt gag tta cta tca gag	1411
102	Asp Gly Val Lys Val Asp Val Ile His Leu Leu Glu Leu Leu Ser Glu	
103	425 430 435	
104	gaa tat ggt gga cga gtt gag cta gca aga gct tat tac aaa gca cta	1459
105	Glu Tyr Gly Gly Arg Val Glu Leu Ala Arg Ala Tyr Tyr Lys Ala Leu	
106	440 445 450	
107	acc tca tca gtg aag aaa cat ttc aaa ggc aat ggt gta att gct agc	1507
108	Thr Ser Ser Val Lys Lys His Phe Lys Gly Asn Gly Val Ile Ala Ser	
109	455 460 465	
110	atg gag cat tgc aac gac ttc ttt ctc ctc ggc acc gaa gcc ata tcc	1555
111	Met Glu His Cys Asn Asp Phe Phe Leu Leu Gly Thr Glu Ala Ile Ser	
112	470 475 480 485	
113	ctc ggc cgc gtc gga gat gat ttt tgg tgc tct gat cca tct ggt gat	1603
114	Leu Gly Arg Val Gly Asp Asp Phe Trp Cys Ser Asp Pro Ser Gly Asp	
115	490 495 500	
116	cca aat ggt aca tat tgg ctc caa ggt tgt cac atg gta cat tgt gcc	1651
117	Pro Asn Gly Thr Tyr Trp Leu Gln Gly Cys His Met Val His Cys Ala	
118	505 510 515	
119	tac aac agt tta tgg atg gga aat ttc att cag cca gat tgg gac atg	1699
120	Tyr Asn Ser Leu Trp Met Gly Asn Phe Ile Gln Pro Asp Trp Asp Met	
121	520 525 530	
122	ttt cag tcc act cat cct tgt gct gaa ttt cat gcc gcc tca cga gcc	1747
123	Phe Gln Ser Thr His Pro Cys Ala Glu Phe His Ala Ala Ser Arg Ala	
124	535 540 545	
125	ata tcc ggc gga cca att tat gtt agt gat tgt gtt ggt aat cac aat	1795
126	Ile Ser Gly Gly Pro Ile Tyr Val Ser Asp Cys Val Gly Asn His Asn	
127	550 555 560 565	
128	ttc aag ttg ctc aaa tct ctt gtt ttg ccc gat ggt tct atc ttg cgt	1843
129	Phe Lys Leu Leu Lys Ser Leu Val Leu Pro Asp Gly Ser Ile Leu Arg	
130	570 575 580	
131	tgt caa cat tac gca ctc cct aca aga gat tgc ttg ttt gaa gac cct	1891
132	Cys Gln His Tyr Ala Leu Pro Thr Arg Asp Cys Leu Phe Glu Asp Pro	
133	585 590 595	
134	ttg cat aat ggc aaa aca atg ctg aaa att tgg aat ctc aac aaa tat	1939
135	Leu His Asn Gly Lys Thr Met Leu Lys Ile Trp Asn Leu Asn Lys Tyr	
136	600 605 610	
137	aca ggt gtt ttg ggt ctt ttc aac tgc caa ggt ggt ggg tgg tgt cct	1987
138	Thr Gly Val Leu Gly Leu Phe Asn Cys Gln Gly Gly Gly Trp Cys Pro	
139	615 620 625	
140	gag gca cgg cga aac aag agt gta tct gaa ttt tca cgc gcg gtg aca	2035
141	Glu Ala Arg Arg Asn Lys Ser Val Ser Glu Phe Ser Arg Ala Val Thr	
142	630 635 640 645	
143	tgt tat gca agt ccc gaa gac att gaa tgg tgc aat ggg aaa act cca	2083
144	Cys Tyr Ala Ser Pro Glu Asp Ile Glu Trp Cys Asn Gly Lys Thr Pro	

PAGE: 4

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/992,914C

DATE: 08/13/1999

TIME: 11:32:50

Input Set: H992914C.RAW

```

145          650          655          660
146  atg agc acc aaa ggt gtg gat ttt ttt gct gtg tat ttt ttc aag gag 2131
147  Met Ser Thr Lys Gly Val Asp Phe Phe Ala Val Tyr Phe Phe Lys Glu
148          665          670          675
149  aag aaa ttg agg ctc atg aag tgt tct gat aga ttg aaa gtt tcg ctt 2179
150  Lys Lys Leu Arg Leu Met Lys Cys Ser Asp Arg Leu Lys Val Ser Leu
151          680          685          690
152  gag cca ttt agt ttt gag cta atg aca gtg tct cca gtg aaa gtg ttt 2227
153  Glu Pro Phe Ser Phe Glu Leu Met Thr Val Ser Pro Val Lys Val Phe
154          695          700          705
155  tcg aaa agg ttt ata cag ttt gca ccg att ggg tta gtg aac atg ctg 2275
156  Ser Lys Arg Phe Ile Gln Phe Ala Pro Ile Gly Leu Val Asn Met Leu
157  710          715          720          725
158  aac tct ggt ggt gcg att cag tct ctg gag ttt gat gat aat gca agt 2323
159  Asn Ser Gly Gly Ala Ile Gln Ser Leu Glu Phe Asp Asp Asn Ala Ser
160          730          735          740
161  ttg gtc aag att ggg gtg aga ggt tgc ggg gag atg agc gtg ttt gcg 2371
162  Leu Val Lys Ile Gly Val Arg Gly Cys Gly Glu Met Ser Val Phe Ala
163          745          750          755
164  tct gag aaa ccg gtt tgc tgc aaa att gat ggg gtt aag gtg aaa ttt 2419
165  Ser Glu Lys Pro Val Cys Cys Lys Ile Asp Gly Val Lys Val Lys Phe
166          760          765          770
167  ctt tat gag gac aaa atg gca aga gtt caa att ctg tgg cct agt tct 2467
168  Leu Tyr Glu Asp Lys Met Ala Arg Val Gln Ile Leu Trp Pro Ser Ser
169          775          780          785
170  tca aca ttg tct ttg gtc cag ttt tta ttt tgatccctag gaatcctatg 2517
171  Ser Thr Leu Ser Leu Val Gln Phe Leu Phe
172  790          795
173  cacgtgtctc tgtttacaag tactttatat aagtataata tgtatctatt tccattttta 2577
174  actgtcttta tgcaattagg tggtaatta gttatttgtt tgtgaagtaa ctaacttgct 2637
175  tgtgttgtaa gcttataata tatggtcaag ttcctcactt gtatatacct gttgtatgta 2697
176  taaattttac tatatatgac taacatcatt atcttgtgag caaaaaaaaa 2746
177 <210> SEQ ID NO 2
178 <211> LENGTH: 799
179 <212> TYPE: PRT
180 <213> ORGANISM: Vicia faba
181 <400> SEQUENCE: 2
182  Met Ala Pro Pro Ser Ile Thr Lys Thr Ala Thr Leu Gln Asp Val Ile
183      1          5          10          15
184  Ser Thr Ile Asp Ile Gly Asn Gly Asn Ser Pro Leu Phe Ser Ile Thr
185          20          25          30
186  Leu Asp Gln Ser Arg Asp Phe Leu Ala Asn Gly His Pro Phe Leu Thr
187          35          40          45
188  Gln Val Pro Pro Asn Ile Thr Thr Thr Thr Thr Thr Thr Ala Ser Ser
189          50          55          60
190  Phe Leu Asn Leu Lys Ser Asn Lys Asp Thr Ile Pro Asn Asn Asn Asn
191          65          70          75          80
192  Thr Met Leu Leu Gln Gln Gly Cys Phe Val Gly Phe Asn Ser Thr Glu
193          85          90          95
194  Pro Lys Ser His His Val Val Pro Leu Gly Lys Leu Lys Gly Ile Lys

```

PAGE: 5

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/992,914C

DATE: 08/13/1999

TIME: 11:32:50

Input Set: H992914C.RAW

195				100				105				110				
196	Phe	Met	Ser	Ile	Phe	Arg	Phe	Lys	Val	Trp	Trp	Thr	Thr	His	Trp	Val
197			115					120				125				
198	Gly	Thr	Asn	Gly	Gln	Glu	Leu	Gln	His	Glu	Thr	Gln	Met	Leu	Ile	Leu
199		130					135				140					
200	Asp	Lys	Asn	Asp	Ser	Leu	Gly	Arg	Pro	Tyr	Val	Leu	Leu	Leu	Pro	Ile
201	145					150					155				160	
202	Leu	Glu	Asn	Thr	Phe	Arg	Thr	Ser	Leu	Gln	Pro	Gly	Leu	Asn	Asp	His
203				165						170				175		
204	Ile	Gly	Met	Ser	Val	Glu	Ser	Gly	Ser	Thr	His	Val	Thr	Gly	Ser	Ser
205			180					185				190				
206	Phe	Lys	Ala	Cys	Leu	Tyr	Ile	His	Leu	Ser	Asn	Asp	Pro	Tyr	Ser	Ile
207		195						200				205				
208	Leu	Lys	Glu	Ala	Val	Lys	Val	Ile	Gln	Thr	Gln	Leu	Gly	Thr	Phe	Lys
209		210					215				220					
210	Thr	Leu	Glu	Glu	Lys	Thr	Ala	Pro	Ser	Ile	Ile	Asp	Lys	Phe	Gly	Trp
211	225					230				235					240	
212	Cys	Thr	Trp	Asp	Ala	Phe	Tyr	Leu	Lys	Val	His	Pro	Lys	Gly	Val	Trp
213				245						250				255		
214	Glu	Gly	Val	Lys	Ser	Leu	Thr	Asp	Gly	Gly	Cys	Pro	Pro	Gly	Phe	Val
215			260					265				270				
216	Ile	Ile	Asp	Asp	Gly	Trp	Gln	Ser	Ile	Cys	His	Asp	Asp	Asp	Asp	Glu
217		275					280				285					
218	Asp	Asp	Ser	Gly	Met	Asn	Arg	Thr	Ser	Ala	Gly	Glu	Gln	Met	Pro	Cys
219		290					295				300					
220	Arg	Leu	Val	Lys	Tyr	Glu	Glu	Asn	Ser	Lys	Phe	Arg	Glu	Tyr	Glu	Asn
221	305					310				315					320	
222	Pro	Glu	Asn	Gly	Gly	Lys	Lys	Gly	Leu	Gly	Gly	Phe	Val	Arg	Asp	Leu
223				325						330					335	
224	Lys	Glu	Glu	Phe	Gly	Ser	Val	Glu	Ser	Val	Tyr	Val	Trp	His	Ala	Leu
225			340					345				350				
226	Cys	Gly	Tyr	Trp	Gly	Gly	Val	Arg	Pro	Gly	Val	His	Gly	Met	Pro	Lys
227		355					360				365					
228	Ala	Arg	Val	Val	Val	Pro	Lys	Val	Ser	Gln	Gly	Leu	Lys	Met	Thr	Met
229		370					375				380					
230	Glu	Asp	Leu	Ala	Val	Asp	Lys	Ile	Val	Glu	Asn	Gly	Val	Gly	Leu	Val
231	385					390				395					400	
232	Pro	Pro	Asp	Phe	Ala	His	Glu	Met	Phe	Asp	Gly	Leu	His	Ser	His	Leu
233				405						410					415	
234	Glu	Ser	Ala	Gly	Ile	Asp	Gly	Val	Lys	Val	Asp	Val	Ile	His	Leu	Leu
235			420					425				430				
236	Glu	Leu	Leu	Ser	Glu	Glu	Tyr	Gly	Gly	Arg	Val	Glu	Leu	Ala	Arg	Ala
237		435					440				445					
238	Tyr	Tyr	Lys	Ala	Leu	Thr	Ser	Ser	Val	Lys	Lys	His	Phe	Lys	Gly	Asn
239		450					455				460					
240	Gly	Val	Ile	Ala	Ser	Met	Glu	His	Cys	Asn	Asp	Phe	Phe	Leu	Leu	Gly
241	465					470				475					480	
242	Thr	Glu	Ala	Ile	Ser	Leu	Gly	Arg	Val	Gly	Asp	Asp	Phe	Trp	Cys	Ser
243				485						490					495	
244	Asp	Pro	Ser	Gly	Asp	Pro	Asn	Gly	Thr	Tyr	Trp	Leu	Gln	Gly	Cys	His

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Input Set: H992914C.RAW

Line	Error/Warning	Original Text
387	W "N" or "Xaa" used: Feature required	tgg gac atg ttc cag tcc act cac cct tgt g
1102	W "N" or "Xaa" used: Feature required	ttnaangtnt ggtggacnac ncantgggtn gg
1115	W "N" or "Xaa" used: Feature required	atnatngana anttnggntg gtgnacntgg gangcntt
1128	W "N" or "Xaa" used: Feature required	tanaangcnt cccangtnca ccancnnaan ttntcnat
1141	W "N" or "Xaa" used: Feature required	ggnggntgnc cncnggntt ngtnatnatn gangangg
1154	W "N" or "Xaa" used: Feature required	tgccancnt cntcnatnat nacnaancn ggnggnca
1167	W "N" or "Xaa" used: Feature required	aanaancant tnaanggnaa ngngtnatn gc
1180	W "N" or "Xaa" used: Feature required	gcnatnacnc cnttncntt naantgnttn tt
1193	W "N" or "Xaa" used: Feature required	tggatgggna anttnatnca nccngantgg ganatggt
1206	W "N" or "Xaa" used: Feature required	aacatntccc antcnggntg natnaanttn cccatcca
1219	W "N" or "Xaa" used: Feature required	catnttnacn arncnatng gngcnaa
1228	W "N" or "Xaa" used: Feature required	aaracngcnc cnagyathat hgacaa
1237	W "N" or "Xaa" used: Feature required	aarathtgga ayctnaacaa
1246	W "N" or "Xaa" used: Feature required	aargcnagrg tngtngtncc naag
1255	W "N" or "Xaa" used: Feature required	yttrttnagr ttccadatth t
1264	W "N" or "Xaa" used: Feature required	yttrtcytc tanagraatt t
1353	W "N" or "Xaa" used: Feature required	cgattnaang tntggtggac nacncantgg gtngg
1366	W "N" or "Xaa" used: Feature required	ggcctanaan gcntcccang tncaccancc naanttn
1379	W "N" or "Xaa" used: Feature required	cgatggatgg gnaanttnat ncancngan tggganat
1392	W "N" or "Xaa" used: Feature required	ggccacatnt tnacnarncc natngngcn aa
1459	W "N" or "Xaa" used: Feature required	cgattnaang tntggtggac nacncantgg gtngg
1472	W "N" or "Xaa" used: Feature required	ggccagcnat nacncnttn cnttnaant gntntt
1485	W "N" or "Xaa" used: Feature required	cgaatnatng anaantngg ntggtgnacn tggganc
1498	W "N" or "Xaa" used: Feature required	ggccacatnt tnacnarncc natngngcn aa
1511	W "N" or "Xaa" used: Feature required	cgatggatgg gnaanttnat ncancngan tggganat
1524	W "N" or "Xaa" used: Feature required	ggccacatnt tnacnarncc natngngcn aa